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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/333,759	06/15/1999	PHILIP R. JEFFS	35-28	4481

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EXAMINER

MEI, XU

ART UNIT PAPER NUMBER

2644

DATE MAILED: 10/08/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/333,759

**Applicant(s)**

JEFFS ET AL.

**Examiner**

Xu Mei

**Art Unit**

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 1999.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-22 and 32-46 is/are allowed.
- 6) ☒ Claim(s) 1-8, 23-31 and 47-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

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#### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 47-48, 50; 23, 25, 28-31, 59 and 61-66 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Maag et al (US-5,892,833, hereafter, Maag).

Regarding claims 47-48 and 50, Maag in Figures 6A, 6B clearly disclosed the claimed invention. The filters shown by Maag are 2<sup>nd</sup> order filters.

Maag in Figures 1 and 3 discloses the claimed audio signal circuit as recited in claims 23, 25, 28-31. The low pass filter, band pass filter, high pass filter as shown are 2<sup>nd</sup> order filters as claimed. A combining circuit is the summing circuit 40. And there is no phase distortion (i.e., phase shift) with regard to the circuit configuration of Figures 1 and 3 (see col.

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5, lines 12-18. And Maag shows the filters can be implemented as digital filters as shown in Figure 1.

Method claims 59, 61-66 are rejected for the same reasoning as set forth for the rejection of apparatus claims 23, 25, 28-31 since the apparatus claims perform the same functions as the method claims.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maag.

Regarding claims 26-27, What's not shows by Maag are the specific claimed gain parameters at various cutoff frequencies for the filters. Maag shows in Col. 4, lines line 32-54 that the different gain parameters at different cutoff frequency is selected by using different values for resistors and capacitors of the filters. One of ordinary skill in the art would have realized to obtain optimized and desired gain parameters at

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various cutoff frequencies for the filters as claimed can be easily done by arranging or using different values for the resistors and capacitors of the filters.

5. Claims 1-8; 51-58; 24, 49 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maag in view of Holman (US-4,569,076).

Regarding claims 1-8, Maag disclosed the audio signal circuit with 2<sup>nd</sup> order filter circuits as discussed above. Maag fails to show the filters are 4<sup>th</sup> order filter circuits as recited in claims 1-8. Holman discloses in Col. 6, line 49-Col. 7, line 5 that the Linkwitz-Riley alignment type filters utilizing for filtering networks or circuits (4<sup>th</sup> order filter circuit) are old and well known for used in audio art with the advantages providing flat amplitude, minimum lobing with attention paid to phase response. It would have been obvious for one of ordinary skill in the art to modifies the filter circuits of Maag with the well known Linkwitz-Riley alignment type 4<sup>th</sup> order filter circuits in order to have the advantages providing flat amplitude, minimum lobing with attention paid to phase response provided by the filters.

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Method claims 51-58 are rejected for the same reasoning as set forth for the rejection of apparatus claims 1-9 since the apparatus claims perform the same functions as the method claims.

Regarding claims 24, 49, and 60, Maag disclosed the audio signal circuit as discussed in claims 23, 47 and 59 above. Maag fails to show the filters are implemented with Linkwitz-Riley alignment type of filters. Holman discloses in Col. 6, line 49-Col. 7, line 5 that the Linkwitz-Riley alignment type filters (a 4<sup>th</sup> order filter is used as example) are old and well known for used in audio art with the advantages providing flat amplitude, minimum lobing with attention paid to phase response. It would have been obvious for one of ordinary skill in the art to modifies the filter circuits of Maag with the well known Linkwitz-Riley alignment type filters in order to have the advantages providing flat amplitude, minimum lobing with attention paid to phase response provided by the filters.

6. Claims 9-22 and 32-41 are allowed.

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7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwahara, Orban, Takahashi et al, Eberbach, Date et al, Janssen, Maag et al (US-5,717,773, 5,748,754), Armstrong et al, Dougherty, and Werrbach et al are made of record here as pertinent art to the claimed invention. The cited references discloses various audio signal processing system including filtering means.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 703-308-6610. The examiner can normally be reached on Monday-Friday (9:30-6:00), alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Xu Mei  
Primary Examiner  
Art Unit 2644  
9/29/2004